REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-54 are pending in the present application. Claims 1, 2, 5, 6, 9, 10, 12-18, 20-33, and 38-53 are amended and Claim 54 is added without adding new matter by this amendment.

In the outstanding Office Action, the Examiner has determined that Claims 1, 2, 5, 6, 9-18, 21-23, 26, 27, 30, 31, 34, 35, 38, 39, 42, 43, 46, 47, 50 and 51 read on the elected species; the drawings were objected to; Claims 1, 2, 5, 6, 9, 16-18, 21-23, 26, and 27 were rejected under 35 U.S.C. § 102(b) as anticipated by Kikushima (U.S. Patent No. 5,896,216); and Claims 10-15, 30, 31, 34, 35, 38, 39, 42, 43, 46, 47, 50, and 51 were rejected under 35 U.S.C. § 103(a) as unpatentable over Kikushima.

Regarding the objection to the drawings, Claims 10, 30, and 31 have been amended to recite that "combining means projects plural light beams onto a photo-detector to combine the plural light beams and convert the combined beams to electrical signals" and Figures 1, 9, and 10 show elements (for example photo-detector 207) that correspond to the combining means. Thus, it is believed that the Figures show each feature of the invention specified in the claims. Accordingly, it is respectfully requested this objection be withdrawn.

Regarding the rejection of Claims 1, 2, 5, 6, 9, 16-18, 21-23, 26, and 27 under 35 U.S.C. § 102(b) as anticipated by Kikushima, independent Claims 1, 2, 5, 6, 16, and 21 have been amended to more clearly recite:

> selecting a first electrical component from said plural electrical components, said selected first electrical component being a frequency-shifted carrier component obtained from the combining of the modulated optical signal with the first optical local component;
>
> selecting a second electrical component from said plural electrical components, said selected second electrical component being a frequency-

shifted sideband component obtained from the combining of the modulated optical signal with the second optical local component; and

demodulating to provide an output high-frequency signal using the first and second electrical components.

The claim amendments find support in Figure 1 and in the corresponding description of the specification.

Briefly recapitulating, amended independent Claim 1 is directed to a method including, inter alia, combining a modulated optical signal, a first optical local component from a local light source and a second optical local component from the local light source to produce an electrical signal which includes plural electrical components. Further, the method includes selecting a first electrical component from the plural electrical components, the selected first electrical component being a frequency-shifted carrier component obtained from the combining of the modulated optical signal with the first optical local component, and selecting a second electrical component from the plural electrical components, the selected second electrical component being a frequency-shifted sideband component obtained from the combining of the modulated optical signal with the second optical local component. Furthermore, the method includes demodulating to provide an output high-frequency signal using the first and second electrical components. Independent Claims 2, 5, 6, 16, and 21 have been amended similar to Claim 1.

In a non-limiting example, Figure 1 shows the light source 201 that produces the optical signal, the local light source 205 that produces the first and second optical local components, and the filter 208 that selects the first and second electrical components having the frequencies $f_1 - f_2 + f_{LO}/2$ and $f_1 - f_2 + f_{RF} - f_{LO}/2$, respectively. Thus, the independent claims recite two optical signals (first and second optical local components) in addition to the modulated optical signal that are used to produce two electrical components of plural electrical components.

Turning to the applied art, Kikushima shows in Figure 9B a light source 111-1 and a local light source 112-1, each of which applies only one optical signal to a photodetector 112-3. Therefore, Kikushima does not teach or suggest a modulated optical signal and first and second optical local components that are combined to produce an electrical signal which includes plural electrical components. In addition, Kikushima does not teach or suggest selecting first and second electrical components obtained from the combining of the modulated optical signal with the first optical local component and the second optical local component, respectively, as recited in amended Claims 1, 2, 5, 6, 16, and 21.

On the contrary, Kikushima uses an optical signal (C) having a single line spectrum as the optical local signal in the optical heterodyne shown in Figure 13, as disclosed at column 10, lines 7-29, and at column 13, lines 31-54. In addition, Kikushima discloses at column 11, lines 13-19, that the signals extracted and mixed include an FM modulation signal and a pilot signal and not a frequency-shifted carrier component and a frequency-shifted sideband component as recited in amended Claims 1, 2, 5, 6, 16, and 21.

Accordingly, it is respectfully submitted that independent Claims 1, 2, 5, 6, 16, and 21 and each of the claims depending therefrom patentably distinguish over Kikushima.

Regarding the rejection of Claims 10-15, 30, 31, 34, 35, 38, 39, 42, 43, 46, 47, 50, and 51 under 35 U.S.C. § 103(a) as unpatentable over Kikushima, that rejection is respectfully traversed for the following reasons.

The outstanding Office Action relies on various assertions considered to be "well-known in the art," as stated at page 5, line 4 and line 18. However, there is no evidence on record to support those assertions. Under the provision of MPEP § 2144.03, the PTO is called upon to provide documentary evidence in place of these noted assertions. Furthermore, merely concluding that something is "well-known" violates court precedent

regarding proof, particularly as to showing needed evidence to establish motivation. See In re Lee, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002).

In addition, even if these assertions are valid, these assertions do not overcome the deficiencies of Kikushima discussed above. Further, Claims 10-15, 30, 31, 34, 35, 38, 39, 42, 43, 46, 47, 50, and 51 depend from independent Claims 1, 2, 5, 6, 16, and 21, which are believed to be allowable as noted above.

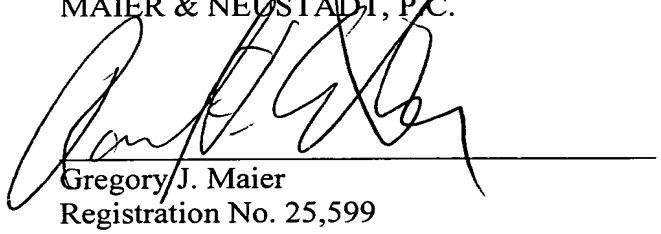
Accordingly, it is respectfully submitted that dependent Claims 10-15, 30, 31, 34, 35, 38, 39, 42, 43, 46, 47, 50, and 51 are also allowable.

New Claim 54 has been added to set forth the invention in a varying scope and Applicants submit the new claim is supported by the originally filed specification. In particular, new Claim 54 is similar to Claim 1 except that Claim 54 states the frequencies of the optical and electrical signals. Accordingly, it is respectfully submitted new Claim 54 is allowable for similar reasons as discussed above.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Registration No. 25,599
Raymond F. Cardillo, Jr.
Registration No. 40,440
Attorneys of Record

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)
RFF:smi

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